# RHENIUM STATISTICS

By Thomas D. Kelly and Michael J. Magyar [All values in metric tons (t) unless otherwise noted]

Last modification:	March 15.	2002
--------------------	-----------	------

			Apparent	Unit value	Unit value	World
Year	Production	Imports	consumption	(\$/t)	(98\$/t)	production
1963		0.00907	0.227			
1964	0.454	0.0962	0.680	1,010,000	5,330,000	
1965	0.544	0.213	0.458	1,000,000	5,190,000	
1966	0.735	0.0381	0.472	981,000	4,930,000	
1967	0.782	0.0435	0.386	976,000	4,760,000	
1968	1.09	0.198	0.352	754,000	3,540,000	
1969	1.59	4.44	0.907	79,400	352,000	
1970	2.68	0.469	2.31	1,890,000	7,930,000	
1971	3.29	1.73	3.45	2,430,000	9,770,000	
1972	2.77	0.948	2.18	2,240,000	8,720,000	
1973	3.18	2.03	2.00	2,110,000	7,760,000	6.53
1974	2.27	1.51	2.04	1,210,000	4,010,000	6.49
1975	0.910	0.465	2.72	1,010,000	3,060,000	4.26
1976	0.680	1.87	3.76	771,000	2,210,000	5.90
1977		2.84	3.31	590,000	1,590,000	4.58
1978		5.67	5.67	453,000	1,130,000	7.12
1979		4.18	4.31	924,000	2,070,000	7.26
1980	6.44	2.50	3.31	3,430,000	6,780,000	9.5
1981	7.17	4.39	2.99	765,000	1,370,000	13.7
1982	5.08	2.44	2.68	366,000	618,000	13.5
1983	7.35	2.98	3.99	440,000	720,000	9.6
1984	7.80	3.05	4.63	493,000	773,000	15.2
1985	9.57	3.75	5.90	505,000	765,000	18.4
1986	9.84	2.49	5.90	600,000	893,000	19.0
1987	9.89	3.37	7.03	638,000	916,000	24.4
1988	11.9	3.09	7.71	1,180,000	1,620,000	26.7
1989	17.5	3.79	8.17	1,090,000	1,430,000	35.2
1990	17.5	7.97	7.71	1,130,000	1,410,000	33.6
1991	19.2	13.3	8.87	1,210,000	1,450,000	36.6
1992	16.0	10.3	6.80	1,350,000	1,570,000	32.0
1993	12.2	4.90	6.90	1,010,000	1,130,000	24.2
1994	15.5	7.49	12.9	922,000	1,010,000	26.7
1995	17.0	11.8	16.2	700,000	749,000	28.2
1996	14.0	17.7	24.1	729,000	758,000	22.7
1997	15.4	13.1	17.9	720,000	731,000	35.6
1998	14.0	21.8	28.6	810,000	810,000	46.0
1999	12.0	12.8	32.5	1,070,000	1,040,000	43.0
2000	12.6	15.8	32.0	922,000	873,000	43.0

## **Rhenium Worksheet Notes**

## **Data Sources**

The sources of data for the rhenium worksheet are the mineral statistics publications of the U.S. Bureau of Mines and the U.S. Geological Survey—Minerals Yearbook (MYB), Mineral Commodity Summaries (MCS), and its predecessor, Commodity Data Summaries (CDS). The years of publication and corresponding years of data coverage are listed in the References section below. Blank cells in the worksheet indicate that data were not available.

#### **Production**

For the years 1964–99, production is reported as mine production in rhenium metal content in the MYB. Data were not available for the years 1977–79. For the years 1980–2000, rhenium production was estimated as rhenium content of molybdenite ( $MoS_2$ ) produced as a byproduct of porphyry copper ore production.

## **Imports**

For the years 1963–89, imports are reported in the MYB as rhenium metal and ammonium perrhenate in contained weight of rhenium. Since that time ammonium perrhenate was reported in gross weight. For this table, contained weight of rhenium for both rhenium metal and ammonium perrhenate are summed. All imports for the years 1963–2000 are reported in the MYB.

## **Apparent Consumption**

Apparent consumption is reported in the MYB as estimated consumption for the years 1963–2000. Apparent consumption is not calculated because there is inadequate information. Primary production is inferred; secondary production, stocks, and exports are unavailable; only imports are reported.

## Unit Value (\$/t)

Unit value is the value of 1 metric ton (t) of rhenium apparent (estimated) consumption. Unit value is estimated by weighted averaging of the import value of rhenium metal and ammonium perrhenate metal content. The import values for metal and ammonium perrhenate are reported in the MYB for the years 1963–2000. The import data used to calculate unit value in 1969 was edited to exclude a single import that deviated from reported prices and other import unit values.

#### Unit Value (98\$/t)

The Consumer Price Index conversion factor, with 1998 as the base year, is used to adjust unit value in current U.S. dollars to the unit value in constant 1998 U.S. dollars.

## **World Production**

World production of rhenium is reported in the MCS and CDS as world mine production for the years 1972–2000.

### References

- U.S. Bureau of Mines, 1962–77, Commodity Data Summaries, 1962–77.
- U.S. Bureau of Mines, 1963-96, Minerals Yearbook, 1963-94.
- U.S. Bureau of Mines, 1978–95, Mineral Commodity Summaries, 1978–95.
- U.S. Geological Survey, 1997–2001, Mineral Commodity Summaries, 1997–2001.
- U.S. Geological Survey, 1997–2001, Minerals Yearbook, v. I, 1995–2000.
- U.S. Geological Survey and U.S. Bureau of Mines, 1996, Mineral Commodity Summaries, 1996.

## For more information, please contact:

Michael J. Magyar
USGS Rhenium Commodity Specialist
(703) 648-4964
mmagyar@usgs.gov

Thomas D. Kelly Minerals and Materials Analysis Section, USGS (303) 236-8747 x 269 kellyt@usgs.gov